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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,122	09/15/2003	Bruno Greppi	60681.300101	7151

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EXAMINER

WILLIAMS, THOMAS J

ART UNIT PAPER NUMBER

3683

DATE MAILED: 05/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/567,122	<b>Applicant(s)</b> GREPPI, BRUNO	
	<b>Examiner</b> Thomas J. Williams	<b>Art Unit</b> 3683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 March 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)          |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>3/30/05</u> . | 6) <input type="checkbox"/> Other: _____   |

### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 30, 2005 has been entered.

2. Acknowledgment is made in the receipt of the information disclosure statement filed March 30, 2005.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-6, 8, 9, and 11-15 are rejected under 35 U.S.C. 102(b) as being anticipated by US 3,295,640 to Beuchle.

Re-claims 1 and 8, Beuchle discloses a brake disk, comprising: a disk member having an inner rim, an outer rim, an obverse face, and a reverse face, the faces are provided with circumferentially alternating protruding segments (4, 4', 4'', 5, 5', and 5'') and indented segments 2 and 3, the protruding segments will engage brake pads (column 1 lines 50-53 and column 2 lines 67-69, wherein Beuchle specifically discloses that the braking face 13 of the cylinder 11' and brake surface 12 can be provided with brake shoes, i.e. brake pads or friction elements), the indented segments will facilitate cooling.

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The disk plane is entirely contained in the material of the disk throughout the intersection therewith, see figure 2. A disk plane can be drawn such that it will not intersect any indented segments.

Re-claims 2, 6, 9 and 12-14, see figures.

Re-claims 3 and 15, the angle of incidence of the leading edge with the brake pad is 0 degrees (or perpendicular), 0 degrees is less than 45 degrees.

Re-claim 4, the indented segments are open to the outer rim and the inner rim, see figure 5.

Re-claims 5 and 11, the inner and outer rim portions have cooling channels inlets and outlets as scalloped formations for increasing surface area, as such the inner and outer rims have an irregular shape (i.e. not smooth and without recesses). When viewing figure 2 the outlets have a curved formation, the inlets are best shown in figures 3-5.

5. Claims 1-4, 6, 8-10, 12-15 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,735,366 to Suga.

Re-claims 1 and 8, Suga discloses in figures 7-9 a brake disk, comprising: a disk member having an inner rim, an outer rim, an obverse face, and a reverse face, the faces are provided with circumferentially alternating protruding segments 22 and indented segments 24 and 25, the protruding segments will engage brake pads (column 4 lines 44-46), the indented segments will facilitate cooling. The disk plane is entirely contained in the material of the disk throughout the intersection therewith. A disk plane can be drawn such that it will not intersect any indented segments.

Re-claims 2-4, 6, 9, 10 and 12-15, see figures 7-9.

*Claim Rejections - 35 USC § 103*

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beuchle.

Re-claims 7 and 10, Beuchle teaches that the indented segments are smaller in circumferential width than that of the protruding segments. However, Beuchle fails to teach what the circumferential width ratio of the indented segments to the protruding segments is, specifically if the ratio is in the range of 10%-40%, or if the indented segment has a circumferential width of less than 40% of the protruding segment. It would have been obvious to one of ordinary skill in the art as a matter of design choice to have provided the disc of Beuchle with indented segments having a circumferential width less than 40% of the protruding segments or with a width ratio of between 10%-40%, since the applicant fails to disclose that having the width of the indented segments less than 40% of the protruding segment solves any stated problem or is for any particular purpose and it appears that having the circumferential width of the indented segment less than 40% of the protruding segment in Beuchle would have allowed sufficient cooling for the disc.

8. Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suga.

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Re-claims 5 and 11, Suga teaches in the first embodiment the indented segments having an irregular or scalloped shape, this shape increases the surface area resulting in increased cooling. It would have been obvious to one of ordinary skill in the art to have provided the disc illustrated in figures 7-9 of Suga with irregular shaped rim portions defined by the indented segments as taught in Suga, thus increasing the cooling capacity of the disc.

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suga.

Suga teaches the indented segments having a smaller circumferential width than that of the protruding segments. However, Suga fails to teach what the circumferential width ratio of the indented segments to the protruding segments is, specifically if the ratio is in the range of 10%-40%. It would have been obvious to one of ordinary skill in the art as a matter of design choice to have provided the disc of Suga with indented segments having a circumferential width of between 10%-40% of the protruding segments, since the applicant fails to disclose that having the width of the indented segments between 10% and 40% of the protruding segment solves any stated problem or is for any particular purpose and it appears that having the circumferential width of the indented segment between 10% and 40% of the protruding segment in Suga would have allowed for sufficient cooling for the disc. Increasing the ratio would have provided increased cooling.

#### ***Response to Arguments***

10. Applicant's arguments filed March 30, 2005 have been fully considered but they are not persuasive. As stated above, Beuchle discloses that brake pads constituting

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friction elements can be used on surfaces 12 and 13 for physically engaging the protruding segments of the brake disc.

Regarding the wearing surface of the disc in Beuchle, it is the opinion of the examiner that all brake discs experience wear. Rotors regularly require resurfacing and replacement as they wear down. Thus even the applicant's brake disc will have a wear surface. The remaining arguments are more specific than the claim language.

Regarding claim 2, the leading edge for gripping the brake pad is believed to be anticipated by Beuchle. The protruding segments on the disc will have a circumferential edge in each direction. One of these edges, depending upon the rotational direction of the disc, will be defined as a leading edge for gripping the brake pad. This is consistent with the applicant's description.

Regarding claims 5 and 11, as stated above figures 2-5 provide various views of the cooling channels, these channels have a curved shaped, and are thus broadly interpreted as being scalloped. This shape tends to increase the overall surface area exposed to the flow of cooling fluid, such as air.

In conclusion, any amendments to the claims that require a new rejection are subject to a final rejection. Thus the final rejection mailed December 15, 2004 was proper since independent claims 1 and 8 were amended to define over the rejection mailed July 20, 2004.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tironi et al. teaches a disc with scalloped inner and outer rims.

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12. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Thomas Williams whose telephone number is 571-272-7128. The examiner can normally be reached on Monday-Thursday from 6:30 AM to 4:00 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Bucci, can be reached at 571-272-7099. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-6584.

THOMAS WILLIAMS  
PATENT EXAMINER

TJW

May 6, 2005

Thomas Williams  
AU 3683  
5-6-05